

**EOSDIS IV&V
Monthly Status Report
For the Period 12/1/96 to 12/31/96
(Deliverable 0201D.4)**

January 15, 1997

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1. PERFORMANCE INFORMATION

1.1 Contract Organization Chart

Exhibit 1-1 illustrates the current organizational structure of the EOSDIS IV&V team. The approximate number of personnel assigned to each technical task is also indicated.

1.2 Programmatic Information

a) Key Recent Accomplishments

- Participated in Executive Council Briefing on 12/4/96.
- Participated in ESDIS tiger team to analyze the soundness of the ECS Release B Replan.
- Provided written inputs to Associate Director for ESDIS (Rick Obenschain) on ways to improve Project visibility through an expanded IV&V role. Briefed Associate Director on these concepts on 1/2/97.
- Submitted Biweekly Issue Summary to ESDIS Management on 12/9/96 highlighting key ECS development issues that warrant close monitoring. (The 12/23 issue summary was canceled with COTR approval.)
- Provided final inputs for new task SOWs for the period 1/1/97 through 9/30/97.
- Ensured on-time delivery of contract deliverables as indicated in Exhibit 1-2.
- Continued on-going training of contract personnel. Training in December included two personnel completing graduate level courses in Information Risk Assessment, and Systems and Software Requirements; Tivoli Overview training conducted on 12/9 through 12/11; and self-paced tutorials at the Goddard Learning Center in Windows 95, Software Cost Estimation (COCOMO), and UNIX.

b) Planned Activities

- Continue refining additional tasking for IV&V, based on direction from Rick Obenschain.
- Finalize significant events / accomplishments from previous period of performance, and develop formal briefing to Performance Evaluation Board (PEB).

Exhibit 1-1: Org Chart (Landscape)

*EOSDIS IV&V Monthly Status Report
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Expected Date Due	Dependency	Milestone/Deliverable	Task #	Status*	Comments
12/2/96		ECS Release A Test Witness Plan (Final)	8	C	Submitted on time.
12/2/96		EGS I&T Program Test Matrix (Update)	11	C	Submitted ahead of schedule on 11/15/96.
12/6/96		Release B External Interfaces CARA TAM	8	C	Submitted on time.
12/9/96		Biweekly Issues Summary	1	C	Submitted on time.
12/11/96		RTM Analysis TAM (Qualitative Assessment)	8	C	Submitted on time.
12/10/96		CCR Impact Analysis Forms	8	C	Submitted on time.
12/16/96		Monthly Status Report	2	C	Submitted on time.
12/17/96		ICWG Open Interface Issues Summary Report	8	C	Submitted on time.
12/23/96		Biweekly Issues Summary	1	CX	Canceled with COTR approval.
12/31/96		EGS I&T Program Plan (Revision)	11	C	Submitted on time.
2/28/97		ISE PITS WWW Browser Issue Reporting/Metrics Version 3.0	4	C	Submitted ahead of schedule on 12/23/96.
1/6/97		Biweekly Issues Summary	1	C	Submitted on time.
1/20/97		Biweekly Issues Summary	1	O	
1/15/97		Monthly Status Report	2	IP	
1/97	RTM release + 2 weeks	RTM Quantitative Assessment TAM	8	O	
1/97	RTM release + 4 weeks	RTM Qualitative Assessment TAM	8	O	
1/97	One week prior to CCB or ICWG meeting	CCR Impact Analysis Forms	8	O	
1/97	At monthly ICWG	ICWG Open Interface Issues Summary Report	8	O	
1/97	As scheduled by ICWG	TAMs on Interface Documents	8	O	
1/97	RTM + 2 weeks and/or end of month	Monthly Metrics Reports	8	O	
1/97	Monthly	EGS I&T Program Test Matrix (Updates)	11	O	

* C = Completed, IP = In Process, O = Open, D = Delayed, CX = Canceled

EXHIBIT 1-2: Status of Milestones/Deliverables

- Continue supporting NASA initiative to move toward Performance Based Contracting (PBC) by participating in ESDIS-Intermetrics planning sessions. Next meeting is tentatively scheduled for 1/22/97.
- Submit Biweekly Issue Summaries to ESDIS Management.
- Proactively identify and interview candidates for open engineering positions under Tasks 8 and 11.
- Continue personnel training initiatives.

1.3 Technical Task Information

Task # 4: IV&V Infrastructure and Tool Development

a) Task Accomplishments

- Delivered Version 3.0 of the Project Issue Tracking System (PITS) WWW Browser on 12/23/96. This version included new string search and metrics reporting capabilities.
- Released Version 1.0 of the Test Verification Database (TVDB) in support of planned test witnessing activities. This version included all data entry capabilities.
- Installed ECS RTM export that was received on 12/19/96. Produced metrics reports relative to the new baseline.
- Released new Automated Requirements Database (ARDB) version to include correct metrics for the new B.0 and B.1 releases.
- Modified EOSDIS IV&V Homepage maintenance utility to accommodate Task 8 documents.
- Completed implementation of cc:Mail remote access for West Virginia network users.
- Continued M&O activities for the Project Issue Tracking System (PITS), Automated Requirements Database (ARDB), Test Management Database (TMDB), and all contract-related homepages.

b) Issues/Concerns

- None.

c) Subcontractor Performance

- EWA performance has been very good. Specific activities included maintaining and operating the Test Management Database (TMDB).

d) Planned Activities

- Release TMDB Version 2.7, which will include requested changes in session planning, result capture, and reporting changes.
- Release TVDB Version 2.0 with preliminary metrics and reporting capabilities.
- Extend the Confidence Test Program Electronic File Cabinet (CTP-EFC) browser to include additional session reporting capabilities.
- Continue support (refinement, development, and maintenance) for the ARDB, PITS, TVDB, and TMDB client/server tools.
- Continue maintenance and data entry activities associated with the EOSDIS IV&V Homepage, EGS I&T Homepage, and the PITS WWW Browser Homepage.

Task # 7: Programmatic and Process Analysis

a) Task Accomplishments

- Developed and refined Windows NT version of the Enhanced System Prototype.
- Continued to make improvements to the system, including implementing additional constraint checking and GUI screens for more objects.
- Developed new code allowing Ada to interact more directly with the GUI screens.
- Continued evaluation on switching to ObjectAda for Windows NT version of model.
- Updated CCM documentation.

b) Issues/Concerns

- This task will suspend activities after January 1997 until additional source documentation is made available to continue CCM model implementation.

c) Subcontractor Performance

- Not Applicable.

d) Planned Activities

- Complete streamlining of Ada/GUI interface.
- Complete evaluation of ObjectAda on Windows NT.
- Review design chapters for Dr. Barkstrom as they are received. The latest received and to be reviewed is entitled, "From Data Products to Granule Versions."
- Close off activities until further notice.

Task # 8: Development Life Cycle Analysis

a) Task Accomplishments

Planning and Rapid Analysis Team:

- Performed a quantitative analysis of requirements having a specified verification method as indicated in the 11/8/96 RTM.
- Began quantitative analysis of the 12/19/96 RTM. Results are to be provided in the December Monthly Metrics Report/Quantitative Analysis to be submitted in early January.
- Performed technical analysis of ECS Release B Replan. Identified and reported potential issues to ESDIS Project. Participated in ESDIS requirements management tiger team to address ECS Release B Replan issues and concerns.
- Briefed COTR on the methodology and results of the Release B external interfaces CARA.

System and Interfaces Analysis Team:

- Completed most of the analysis needed for Preliminary Aster Interface Analysis TAM. This deliverable has been deleted from the task SOW due to a high priority ESDIS request to participate in the Release A Requirements Scrub.
- In response to a quick reaction request from Mark Simons, ESDIS Requirements Manager, reviewed ECS Release A RBRs. Out of 1002 Release A RBRs, found that 734 were needed for TRMM. Prepared and delivered TAM-08-0010 (Release A RBR Requirements Classification) on 12/20/96.

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- Completed qualitative analysis of the 11/8/96 version of ECS RTM. Delivered TAM-08-008 (SCDO and FOS Requirements Functionality and Traceability Assessment for Release A and Release B) on 12/11/96.
- Participated in ICWG meetings and provided IV&V review comments on interface documents.
- Revised issue status information and new issues (as provided by book bosses) into PITS-ICWG repository (ongoing). Delivered full issue summary report and metrics on 12/17 at ICWG status meeting.
- Prepared and submitted Impact Analysis Forms for the following CCRs:

505-41-39-002	Remove TBDs and make Appropriate Changes to Polling with Delivery Record (PDR) Section to LaRC ICD
505-41-18-004	Define Change Control Procedures in the ASTER IRD
505-41-40-003	Remove NIMBUS 7 and METEOR 3 TOMS Data from the GSFC DAAC ICD
505-41-39-003	Add DAO Dataflow for Release A Ingest from LaRC
505-42-01-002	Baseline the EOS AM-1 FDD ECS ICD
505-01-41-126	PGS Rqmt Traceability to Level 2
505-41-14-007	Update TRMM Data Volumes and Loading
505-42-01-005	Baseline the Non-ECS NSI IRD
505-01-35-064	Incorporate Development. Team and ASTER Recommendations in EDOS-ASTER ICD
505-01-41-129	ASTER Level 1 Expedited Data Service Change to F&PRS

- Started analysis on the following CCRs:

505-01-41-127	Update ECS F&PR Ancillary Data Requirements
505-01-41-128	Add IRD/ICDs to ECS Contract Section C
505-41-35-002	Dispositions, Kerberos, Metadata, Versioning, Data Flow - ECS-TSDIS ICD
505-10-36-001	Baseline the MSRD for Landsat 7 & Level 1 Processing

System Modeling Analysis Team:

- Assessed the adequacy of BONEs to support testing activities. Identified strengths and weaknesses of tool for scenario generation. Also, assessed advantages and disadvantages of using the RDD-100 tool.
- Continued work on IV&V Modeling and Simulation Web page. Began converting modeling documentation into Web-compatible format.

System Security Analysis Team:

- Conducted demonstration for EGS I&T team on the capabilities of SafeSuite, a tool used to assess network and system interface vulnerabilities.
- Submitted TAM on 12/20/96 which recommended the SafeSuite tool for EGS I&T usage and which provided a SafeSuite Utilization Plan.
- Analyzed security-related mission critical test procedures in support of ECS Release A test witnessing activity.
- Provided written inputs to CCR 505-41-35-002, "Dispositions, Kerberos, Metadata, Versioning, Data Flow Changes" to the ECS TSDIS ICD.
- Updated EOSDIS Security Requirements to Test Cases Matrix for FOS and EBNet and submitted updates to CSC.

Test Analysis and Witnessing Team:

- Completed development of Final ECS Release A Test Witness Plan and submitted to ESDIS Project on 12/2/96.
- Attended ECS I&T status briefings at GSFC.
- Witnessed two Release A test demonstrations. Submitted preliminary comments to ESDIS and ECS contractor.
- Reviewed test procedure TS025 and submitted preliminary comments to ESDIS and the ECS I&T Team.
- Identified test metrics to be included in Task 8 Monthly Metrics Report.

b) Issues/Concerns

- Task 8 work for January is currently undefined. A new task assignment is currently being developed and iterated based on direction from the new Associate Director for ESDIS.
- Lack of access to a current ECS Release B design continues to constrain the level of design analysis achievable by IV&V.
- Project models are not being fully utilized. The BONEs model shows no new development activity since the spring. The end-to-end analytical model has been implemented in code but has not been verified or validated. The CAP model has also not been utilized other than during the 3Q95 validation efforts.

- Task 11 (EGS I&T) is currently lacking a security expert. Such a person would greatly enhance the efforts of the EGS-7 Security Test Team and would ensure the correct/optimal use of security-related test tools such as the proposed SafeSuite tool.

c) Subcontractor Performance

- CTA is leading the SIA Team. Their technical staff also supports other integrated analysis teams within Task 8. Their performance has been very good.
- SES is leading the TAW Team. Their technical staff also supports other integrated analysis teams within Task 8. Their performance has been very good.

d) Planned Activities

General:

- Continue to define Task 8 SOW deliverables based on evolving IV&V tasking strategy.
- Attend ECS Monthly Progress reviews to gain insight into planning, schedule, progress, and issue aspects of ECS development.
- Work to resolve outstanding Technical Issue Memoranda (TIMs).

Planning and Rapid Analysis Team:

- Complete quantitative analysis of requirements traces in 12/19/96 RTM, and submit December Monthly Metrics Report/Quantitative Analysis.
- Continue to support ESDIS project in review and assessment of ECS Release B Replan.
- Begin quantitative analysis of January release of RTM, as available.

System and Interfaces Analysis Team:

- Complete impact analysis for CCRs listed above as well as other CCRs which are received in January.
- Complete qualitative analysis of requirements traces in 12/20/96 RTM and deliver TAM.
- Begin qualitative analysis of January release of RTM, as available.
- Complete analysis of draft ECS-DAS IRD and generate TAM.

- Participate in ICWG, SIT and NT meetings.

System Modeling Analysis Team:

- Begin thread analysis to support Task 11 analysis of performance requirements.
- Begin analyzing the feasibility of using the BONEs Performance Model to trace events as they flow through the system.

System Security Analysis Team:

- Begin drafting the updates to the EOSDIS Security Policy and Guidelines document.
- Begin developing expertise with the SafeSuite tool to better support security testing during EGS I&T.
- Begin reviewing security-related test case procedures for ECS Release B I&T in support of the test witnessing activity.
- Provide CSC with remaining updates to the EOSDIS Security Requirements to Test Cases Matrix (i.e., provide EDOS updates).
- Continue working to resolve security issues identified in the Project Issue Tracking System (PITS).

Test Analysis and Witnessing Team:

- Continue to review and comment on redlined version of Release A test procedures as necessary.
- Continue to witness Release A testing and attend related status meetings, as scheduled.
- Begin planning and preliminary analysis to support Release B test witnessing.
- Continue attending ECS I&T status briefings and EOSDIS test coordination meetings.

Task # 11: EOS Ground System Integration and Test

a) Task Accomplishments

EGS Version 1 Test Planning:

- Coordinated effectively with external organizations to plan V1 EGS I&T Confidence Test Packages, and execution:

- Provided excellent ECS/TSDIS message exchange testing support based on feedback from TRMM Mission Coordinator, K. Michael; ESDIS ECS I&T Manager, Glenn Iona; and Hughes (K. Leatham, C. Whitaker).
- Provided excellent technical support for ETS, EDOS, and ECS Release A FOS engineering testing based on feedback from ETS and FOS Manager, M. Rackley.

Integration Schedule Tracking and Analysis:

- Provided well organized and accurate Level 4 Version 1 and 2 I&T schedule. Activity included 1) coordinating with ESDIS Level 3 schedule personnel, and 2) providing ad hoc quick turnaround ECS Release B replan “what-if” priority analysis on science test packages and ECS external interfaces.

Integration Test Tool Definition and Plans:

- Met or exceeded milestone deliverables for this period, including monthly test package metrics, Electronic File Cabinet (EFC) development, and Test Management Data Base (TMDB) test tool implementation. Conducted a well received Test, Integration, and Certification Test Oversight Committee (TICTOC) demo of the test tools listed above ahead of schedule.
- Completed revised version of EGS I&T Program Test Matrix ahead of schedule on 11/15/96 (was due 12/1/96).
- Coordinated effectively with ECS, EDOS, and ETS contractors to create a consolidated L3 contractual test requirements repository within the TMDB tool.

EGS Confidence Test Planning:

- Delivered EGS I&T Program Plan Revision on 12/31/96.
- Worked effectively to support ESDIS EGS I&T management team in external events including: 1) 5th ASTER Interface Meeting I&T splinter group with Hughes and the Japanese GDS representatives, 2) AM-1 MOR, 3) Landsat-7 TRR, 4) TICTOC activities including IPT status and issue resolution, and 5) ESDIS Test Data working group.
- Supported the ESDIS EGS I&T management team on ECT1. Activities included writing/maintaining the ECT1 Work Plan and Schedule; producing high level procedures and related text in the ECT1 Test Package; and leading ECT1 team meetings.
- Completed ad hoc quick-react activities without impacting planned deliverables quality or schedule. For example, developed I&T confidence curve to support ESDIS management, and provided ECS Release B I&T technical assessment.

EGS Version 1 Integration and Test:

- Effectively executed initial V1 FSO IPT test activities:
 - Completed Dry Runs of FSO IPT V1 Confidence Test Packages (CTPs) on schedule.
 - Completed scheduled portion of formal FSO IPT V1 CTP execution. Provided valuable test results, Discrepancy Reports, and ERB input.

b) Issues/Concerns

- We need to revise I&T program strategy to support new TRMM mission implementation via GSFC and LaRC DAAC component systems.
- We need a clear definition of B.0 vs. B.1 content so that we can effectively plan Version 2 testing.
- We need to continue developing relationships with our joint test partners. This is especially important when trying to schedule resources.

c) Subcontractor Performance

- Subcontractor performance has been very good.

d) Planned Activities

- Continue formal test execution of FOS V1 confidence tests.
- Support ECT1 EOC Compatibility Test 1. Target is 1/15/97.
- Support initial formal Science IPT meeting with external participants; complete related action items.
- Initiate internal peer review process for Science CTPs.
- Identify EGS I&T test data plan target dates, working with EGS I&T Test Data Coordinator.
- Complete monthly metrics, matrix update, and ongoing task support activities.

2. FINANCIAL/CONTRACTUAL INFORMATION

**This Section
Has Been Removed
Due to Proprietary Content.**